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**The *Qi* Connection:  
*A Study in Studying Qi***

*A Thesis in Completion of a Presidential Scholarship  
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The concept of *Qi* (pronounced “chee”) is a difficult one to understand, let alone study. It strikes most of us as amorphous at best. Traditional Chinese Medicine enthusiasts in the West translate the term as “life-energy”. How much more broad could it be! Some try to make the term scientific, referring to *Qi* as “bio-electrical” or “bio-magnetic”, but they succeed only in clouding the issue further. Certainly, it does not help matters that those who would seem to know the most about this concept of *Qi*, the Qigong masters, are themselves most mysterious. Is it any wonder that many in the Western scientific paradigm discount the *Qi* concept as fiction, superstition, or quackery? Though more scientific study has been devoted to Traditional Chinese Medicine in the West over the past few decades, this attitude about Traditional Chinese Medicine is still very prevalent, largely because of the system’s seeming reliance on the *Qi* Theory. Furthermore, most studies do not address the issue of *Qi* itself, but instead try to fit a Western model on a Traditional Chinese Medicine phenomenon. In my opinion, this often leads to studies which are ambiguous or which do not actually study Traditional Chinese Medicine. At any rate, even the best studies rarely get to the heart of Traditional Chinese Medicine—the *Qi* concept. (Hereafter, Traditional Chinese Medicine will be abbreviated as *TCM*.)

How can we hope to explore a concept as broad and clouded with mystery as *Qi*? I propose to show that the understanding of *Qi* is not only possible within the Western scientific paradigm, but is really quite simple. I think the misunderstanding between the two paradigms (*TCM* and Western science) is more a matter of translation than disagreement. Furthermore, I hold that the *Qi* concept must be more narrowly defined before its validity can be properly examined, by scientific study or otherwise. I believe this process of definition is best accomplished by having a

philosophical dialogue with TCM practitioners, carefully reading ancient Chinese medical texts, and designing studies based on the results of this translation effort.

In my attempt to make my position clear, I will examine three basic questions:

- 1) What is Qi?
- 2) Is Qi real?
- 3) Can Qi be scientifically analyzed?

Let us only hope that my exposition will be slightly less mysterious than its topic.

## **I. What is Qi?**

The word Qi in TCM usually refers to physiological activity and functional vitality (Liu, 3). Thus, this term is often broadly translated as “life force” or “life energy”. Qi can also be translated as “gas”, “air”, “breath”, “odor”, or in other ways. These translations could refer literally to breathing and air (as in “Qi-gong”), or they could be used with a spiritual connotation (Qi is invisible, yet is felt everywhere, like the air). These translations may mean something else entirely, though that seems unlikely.

### ***A. Yin-Yang Theory and the Five Elements***

The Qi concept is the underlying premise of TCM medical theory. However, this concept is rarely used outside the two other main theories underlying TCM, the Yin-Yang Theory and the Five Element Theory. Here I will provide a short explanation of each.

The Yin-Yang Theory originated thousands of years ago, at a time when Chinese scholars were debating about how the universe was created. One of them, Lao-Tzu, suggested that in the beginning there was Chaos. Chaos was, as I understand it, a disorganized mixture of substances. Spontaneously, Chaos became organized into Yin and Yang. Once Yin and Yang had formed, all

other aspects of creation sprang from them. Yin and Yang are traditionally represented by the Taiji, a circle divided in half by a squiggly line into light (Yang) and dark (Yin) areas.

Yin and Yang are used most basically to represent complementary opposites. They may refer to characteristics or to physical things associated with those characteristics. “Yin” may refer to dark, cold, female, water, shallowness, and so on. “Yang” may refer, respectively, to light, hot, male, fire, and depth. Yin and Yang elements are opposed to each other and seem to fight each other for dominance. However, neither Yin nor Yang can exist without its opposite. They may fight, but neither wants to win.

Everything that exists is said to have both Yin and Yang elements. Nothing is purely one or the other. For example, both men and women have Yin and Yang aspects of themselves. Men are called Yang because that is considered to be the dominant aspect; it is assumed that Yin elements are also present, but in a lesser degree. Likewise, Yin is supposed to dominate in women, with Yang elements playing a smaller role.

To remain healthy, a human being must therefore maintain his or her proper balance of Yin and Yang. This balance is not the same for everyone. Though men should be more Yang and women more Yin, the proportion varies by the individual. The goal of TCM is twofold: To restore this balance when it is upset, and to help find and maintain that balance in a healthy individual.

The Yin-Yang Theory is intimately tied up in the Qi Theory. Every living thing has Qi, and all living things also have Yin and Yang. Furthermore, balancing Qi and balancing Yin and Yang elements are both considered to promote health. If Qi actually exists, and everything that exists has Yin and Yang aspects, then “Qi” must have characteristics of both Yin and Yang. Indeed, some things are referred to in TCM as having “Yin Qi”, and others, “Yang Qi”. Thus, Yin and Yang seem



to serve an important purpose in the “Qi” Theory, tying the “Qi” concept directly to the human experience of the world as containing opposing and complementary aspects. Furthermore, they make a very broad term, “Qi”, more practically useful for the TCM doctor. These designations (Yin and Yang) make the term Qi more useful by allowing concrete physical descriptions of Qi, a physical/spiritual concept, in different health situations. Thus subtle symptoms, as manifestations of a disturbance in Qi balance, can be described in terms of an “underlying cause” and treated without waiting for a more serious and specific disease to become manifest.

The Five Element Theory is a younger theory than that of Yin and Yang, but it is still centuries old. According to this theory, all living thing contain aspects of the “Five Elements”—Earth, Metal, Water, Wood, and Fire. Each element directly influences, or is influenced by, each of the other four in a different way. Two of these relationships are creative or nourishing, and two are controlling or hindering.

For illustration, let us examine the Wood element. Wood nourishes Fire, because it helps fire to burn. Wood is nourished by Water, since Water is needed for trees to grow. Wood hinders Earth by penetrating it. Wood is hindered by Metal, because metal tools can be used to chop down trees. Each element has all of these relationships with the other four elements.

This is more complex than the Yin-Yang Theory, but the two theories have similarities in principle. The elements, like Yin and Yang, are mutually interdependent; none could exist without the other five. They are also mutually controlling; they balance each other by ensuring that none grows out of control or becomes too weak. Furthermore, this Five Element designation is present in all living things and describes the nature of Qi.

The Five Element Theory can serve, like the Yin-Yang Theory, both as a memory device and

as a more specific link between the esoteric Qi Theory and its practical application in TCM. The elements themselves are associated with certain phases of Yin and Yang (Fire with “Full Yang”, Earth with “Balanced Yin and Yang”, Water with “Full Yin”, etc.). They are also associated with seasons, times of the day, parts of the body, and a whole myriad of phenomena, both physical and spiritual. All the phenomena which are associated with Yin and Yang are also associated with the Five Elements. Qi, in addition to being described in terms of Yin and Yang, is also described in terms of the Five Elements.

Though each element is associated more with Yin or Yang, each element is used in relation to both Yin and Yang. For example, the body organs are all designated as either Yin or Yang. Furthermore, there are Metal Yin systems and Metal Yang systems, Water Yin and Yang, and so on with each element. The Five Elements help to further classify symptoms and phenomena within the TCM framework.

Neither the Yin-Yang Theory, nor the Five Element Theory, refer to physical substances. There is no Yin or Yang “element”, in the sense of an atom. The Five Element Theory is not meant to imply that Metal, Water, Fire, Earth, and Wood are discrete physical substances which combine in varying proportions to make physical things. This is not ancient Greek physics we’re talking about. Traditional Chinese Medicine is an *energy* based medicine. Yin, Yang, and the Five Elements are classifications of *energy*. “Energy” can be described here as a dynamic force which manifests itself physically but is not wholly physical in the normally understood sense. In other words, TCM is attempting to classify and describe physical manifestations of “energy”, or Qi, in this sense.

## ***B. Four Pillars of TCM***

It is appropriate here to explain a little about the four main branches of TCM, to better explain how the concept of Qi fits into each.

In the West, the most well known and thoroughly studied branch of TCM is acupuncture. Acupuncture theory postulates that certain points on the body are more easily influenced by external Qi than the rest of the body surface. There are hundreds of these points, each with a different name related to its theoretical function. These points are often visualized in charts as connected along closed lines or pathways inside the body. Each line is called a “meridian”. Meridians are sometimes described as actual paths along which Qi physically travels; others say that the points are permeable to Qi, and the paths are merely a memory device to connect related points. Regardless, the points along any given meridian are usually assumed to influence a specific system. The system is usually centered around a physical organ (heart meridian, spleen meridian, etc.). A few meridians are related to more hypothetical systems (circulation sex, triple warmer, central and governing meridians). There are, in total, 14 main meridians and eight connecting meridians.

Using diagnostic techniques like “pulse diagnosis” (which includes over 50 different types of pulses!), “tongue diagnosis” or other, more obvious observations, the acupuncturist determines which systems are imbalanced. Amazingly, acupuncturists can usually say how many treatments will be required to completely fix the ailment. Based on their diagnosis, they insert very thin needles into the skin at differing depths and angles. Stimulation is usually applied to the needles at varying times during the treatment. This stimulation can either be manual or, in modern times, electrical. Usually, some other complementary treatment (herbal healing, qigong, etc.) will be suggested to help cure the problem or prevent its recurrence. Acupuncture, in TCM, is like surgery



in Western medicine in this respect: It is a treatment of last resort. Only if imbalances become very serious is acupuncture considered necessary. The other three pillars of TCM are much more often prescribed traditionally.

Tui'Na, or acupressure massage, is another pillar of TCM. It is based on the use of acupuncture points and meridians. Similar diagnostic techniques are applied as well. However, fewer points are generally used, and acupressure points are stimulated through massage techniques rather than needle penetration. Tui'Na usually requires active participation by both the practitioner and the patient. The patient should focus their mind while the points are stimulated. By personal experience, I can say that Tui'Na is a much more robust, active massage than the type with which most Westerners are familiar. Stimulation proceeds in four stages, each moving more deeply into the tissue. The idea of moving in stages is (contrary to trigger point massage) to actually *prevent* pain by preparing the patient for it gradually. Different techniques which utilize guided stretching and hand motions are incorporated into Tui'Na as well. When performed by a Qigong master, acupressure massage usually involves "Qi emission" by the master. This is a technique wherein the master supposedly projects his or her internal Qi into another person for the purposes of healing.

Herbal healing is the third pillar of TCM. This pillar is somewhat different philosophically than Western drug therapy. Thousands of herbs are categorized according to their nature (warm, cool, neutral), their taste, their configuration (shape, texture, moisture), their color, and their properties. Naturally, these natures correspond to certain Yin and Yang classifications. There are five different tastes, each corresponding to an Element. All of these classifications have some significance in how the herbs are combined and prescribed.

The properties—tonifying, consolidating, dispersing, and purging—express the effect the herb has in the body. These properties are based not only on a chemical reaction, but on their supposed energetic effect. Dispersing and consolidating change the distribution and density of Qi, “Moisture”, and “Blood”; purging and tonifying change the amount of each (Beinfeld and Korngold, 271). Based on the diagnosis, the herbs are usually combined to address the cause and minimize side effects.

The fourth pillar of Traditional Chinese Medicine is Qigong. Qigong is basically a series of dynamic meditation techniques. Whether one is standing still or moving in a controlled way, the motion is dynamic because the Qi is moving. There are thousands of styles of Qigong, some ancient and some modern. All are designed to coordinate the individual’s breathing with their movement. At the same time, the person is engaging their mind in the practice, trying to guide their Qi (or, more accurately, let it guide itself).

The movements themselves are designed with TCM philosophy readily in mind. The beginning of a Tai Chi form (a popular type of Qigong) is a good example. When the practitioner stands still with their feet together, that is Chaos. They step out—the movement represents the formation of Yang. They put their foot down and rest—the formation of Yin is represented. Breathing in and out represents Yin and Yang, respectively. In a series of movements called five animal play, each play is designed to influence certain organ systems. For example, bending backwards and arching your lower back would be an internal massage for your kidneys.

Qigong is the only self-healing pillar of TCM. Though it is recommended that one learn Qigong from a master, the forms are easily practiced individually once they are learned. Qigong includes both self-administered healing techniques (to restore Qi balance) and maintenance

exercises (to maintain Qi balance in healthy individuals). Those who practice Qigong regularly supposedly achieve better health and longer life. The few who practice daily and diligently over many years achieve a level of mastery. Once this mastery is achieved, it is said that the master develops abilities and potentials beyond what normal people develop. The skill which all masters are reputed to have is “Qi emission”, an ability to project their Qi into another individual for the purposes of healing. Other highly individualized skills may be acquired by the master. It is considered the responsibility of the master (much to the chagrin of those interested in scientific study) to be secretive about their practice and their abilities. If they are too public, they believe they would lose Qi and their abilities along with it.

### ***C. Why does Traditional Chinese Medicine Posit the existence of Qi?***

Consciously or not, all human pursuits are based in some philosophical tradition and its underlying assumptions. Traditional Chinese Medicine is no different. Unlike most of these pursuits, however, TCM is fully aware of its philosophical roots *and* assumptions; and these are intimately intertwined in all of its techniques and theories.

The three main traditions underlying TCM theory are Taoism, Buddhism, and Confucianism. Chinese culture accepts all of these traditions, despite their sometimes striking differences, as having validity in certain situations. Thus, it is common draw from all three philosophies whenever it seems appropriate. Traditional Chinese Medicine draws on all three traditions. It draws most heavily from the Taoist philosophy, then the Buddhist, and a very little bit from the Confucian tradition. Allow me to give a brief explanation of each philosophical tradition as it pertains to TCM.

Taoism is both a practical and an esoteric philosophy. It is most focused on the good things of this earth, and less concerned with an afterlife. Thus, it is only natural that a medical system should be based most strongly on this philosophy. However, there is no clear distinction drawn between the physical world and the non physical (i.e., spiritual, mental) one. Though it is obvious that there are some things which belong more in the physical realm than others, the dualistic tendencies of Western philosophy (and Western medicine) are absent. Thus, any medical system must be designed with the whole human being (mind, body, spirit) in mind, since any change in one part of that triad will eventually affect all other parts.

Taoists historically favor the downtrodden and have a disdain for unnatural hierarchy (nobility, rank, wealth, etc.). The Taoist sees hierarchy as an artifice of society which is used to separate people and justify cruelty toward one's fellow human beings. Therefore, another difference between Western philosophy and Taoist thought is the more favorable (though not always equal) position given to women, children, and the poor by Taoism. The Taoist physician studies each sex and age with equal rigor, and is perfectly comfortable noting the empirical differences and similarities between them (in flowery language, of course). Another result of this disdain for hierarchy is a tendency to look for the commonalities between people and to point out the common humanity in all.

In spite of this seeming homogeneity, Taoism seems paradoxically to be a very individualistic philosophy. Of the three Eastern philosophies discussed, it is Taoism which places the most value on individual human life. It is an enhanced individual human experience which the Taoists seek—individual immortality, a long, solitary life in the mountains communing with nature, away from society and the “masses”. In spite of this aloofness, the Taoists still fight, usually on a



personal level, for societal justice. They believe in the right to rebel against a corrupt and cruel government. Martial arts, as developed by Taoists and Buddhists, were precisely for the purposes of protecting themselves and others, and rebellion where necessary.

This individuality and commonality of Taoism manifests itself in TCM. Diseases are not considered to be the same for everyone (with slight variations here or there). Instead, disease is a broad category representing unbalanced Qi, and the manifestations of that are different in every individual. Though people may share common symptoms, these point merely to the origin of the imbalance (as opposed to indicating a generic “disease”). There is no “cure-all” drug for a disease which is administered in all cases (and works in 90 percent of them). Rather, even traditional herbal combinations are tailored to the individual and his diagnosis as closely as possible. The same is true of acupuncture and Tui’Na. There is a broad theoretical commonality, but great attention is paid to the individual experience of disease. Even Qigong exercises are prescribed and designed for the tendencies of the individual. This is one reason why there are thousands of versions of certain Qigong forms, and any one of them is done the “right” way, *if it works for you*.

Taoists were basically the scientists of ancient China. They made detailed empirical observations of all life and the world and recorded their observations. Based on these observations, they designed TCM. The main difference between the ancient Taoist observers and modern scientists is that ancient Taoists did not look for specific reasons *why* things happen. Where the scientist today notes a phenomenon, then attempts to theorize its “mechanism” and prove it correct, the ancient Taoist noted the phenomenon and took it mostly at face value. The only mechanism necessary is Qi; anything else was considered conjecture. Even the Yin-Yang and Five Element theories were not taken as absolutely true, but merely as convenient categorizations of the



phenomena.

My notes about the Buddhist and Confucian philosophies will be brief. Buddhism originated in India and came to China by way of Tibet. The Chinese gave it a slightly more optimistic spin. At any rate, the Buddhists are much more spiritually focused. They have little regard for life on this earth. Inordinate desire for worldly things brings suffering; thus, the Buddhist attempts to curb his or her desire. If nothing is desired too much, then life will be relatively free of suffering. That will make it tolerable until one can die and achieve enlightenment.

Though this seems the opposite of Taoist thought, there are important similarities. Even though the role of the spirit is elevated in Buddhism, this world is still important. One is least likely to be distracted by the physical if one is in good physical condition, and indeed, one path to spiritual enlightenment is through physical training (such as martial arts). The Buddhists and Taoists both believe in enlightenment as a personal journey; both think that very dedicated people can achieve enlightenment in this life. Furthermore, unnatural distinctions between people are held by Buddhists more with disinterest than anything; they do not matter in the grand scheme of things. In my opinion, the Buddhists would be more likely to see phenomena of this world as part of a grand overarching force (such as Qi) than even the Taoists.

Confucian thought is relatively recent in Chinese history, and it came formally into being after TCM was well established. Confucians are focused on natural hierarchies, but natural refers to whatever is true in the world of the gods. Their goal is to make manifest on earth the heavenly order of things. Unlike Buddhists or Taoists, Confucians consider such things as the position of emperor or other governmental ranks to be ordained by the gods and therefore *natural*. They also think there is a hierarchy among families and friends, usually placing the elders or the patriarch at

the head of the household. Of course, part of this divinely bestowed power is responsibility. Theoretically, the natural superiors are expected to act benevolently, justly, and virtuously to their inferiors, and never to abuse their power.

Obviously, Confucian thought is much more different from both Buddhist and Taoist thought than the two are from each other. Since it originated after TCM was established, it has had little effect on the way TCM was practiced. However, it could easily have reinforced the relationship between TCM master and apprentice. The apprentice puts his or her life in the master's hands, and the master is expected to act benevolently and responsibly toward the apprentice.

It is easy to see that of these three philosophies, Taoism is by far the largest influence in TCM. Nonetheless, the other two philosophies do exert some influence in the theory and practice. Could it be that the Qi theory serves as a unifying factor within and between the three?

If one is to assert, as all three philosophies do, that the physical and mental/spiritual worlds are intimately intertwined, what serves as the unifying factor between these worlds? One can designate between them, even if the designations are somewhat blurred. What blurs the line? Qi Theory could certainly serve this purpose within any of the three modes of thought, whether it makes the "Tao" manifest, shows the influence of "Karma", or makes clear the will of "Heaven".

Each of the three suggests that there is a natural order of things. What could show this order to human beings or animals, such that they could know when something is wrong without a real standard of comparison? Qi Theory could also serve this purpose; it could be the innate standard by which all may judge health and disease, harmony and disharmony.

Even if the world is seen as a dualism, as in the Yin and Yang Theory, how can one show that Yin and Yang are necessarily opposites? In order to be opposites, would they not have to be

connected to each other inseparably? If they are connected, is it not consistent to consider them two necessary aspects or manifestations of the same force? Maybe within living things, Qi is that force. (And, in turn, Qi would be the living manifestation of the “Tao” or other larger concepts.)

Many more examples could potentially be given to support this. Qi Theory would seem to be a framework, a “mechanism”, which all three philosophies could agree on. In this way, the Qi concept could serve as the “glue” which holds the theories together and corrects their inconsistencies. Whether the Qi theory has a direct, practical use in diagnosis or treatment is another question. As a unifying factor, Qi serves purpose enough from the philosophical side of Traditional Chinese Medicine.

## **II. Is Qi real?**

As a scientist, I simply cannot conclude that Qi need only be a faith concept to be validated. Those who practice TCM would not accept it merely as faith; many claim to have evidence (anecdotal or scientific) that Qi does, in fact, exist. In asking whether or not Qi Theory has a direct, practical purpose with the TCM system of diagnosis and treatment, we call up a larger question: Is Qi real?

### ***A. What does “real” really mean?***

Now I have to wax linguistic. In what sense is the word “real” to be understood? One of the problems with discussing “reality” is that the term has different implications for the scientific community than it does for the TCM community.

What would make Qi real for a TCM practitioner? To phrase this another way, how would a TCM practitioner know that Qi exists? I can think of at least three arguments from the TCM viewpoint:

1. The Taoist tradition (on which TCM is largely based) is more focused on empirical observations and practical application than the question of why or how something works. Therefore, it might be enough for a TCM practitioner to note that their treatments, based on TCM theories, were successful in dispersing the disease. If the system does what it is supposed to do—cure disease—consistently, then there is no reason to think any part of the system is incorrect. Qi is a key concept in the system; if Qi theory were incorrect, the practitioner might reason, then the system would not work as well as it does.

2. Qi is the original theory on which all the other theories are based. Qi Theory binds all the other theories together. There is no coherence to the TCM system if the theoretical foundations are not connected to each other somehow. In other words, the observations (in order to make sense and be useful) must be grouped in related categories (Yin and Yang, the Five Elements, meridians, etc.). Yet something more must connect the categories. Categories are creations of human beings; they are formed so that human beings can subjectively make sense of the data presented to them. If all observations can be placed in one of three categories, but those three categories cannot be related to each other, then they are no longer categories. Instead, the categories become representations of three different, irreconcilable worlds, none of which affects any of the others. For the Taoists, who see the overlap between categories of observations and note that all things have some effect on all others, this non-correspondence theory is incompatible with their observations. The categories are, for them, obviously connected. What connects them all? Qi.

3. In any paradigm, certain underlying assumptions are made. As a Taoist, one would recognize this. Perhaps this is why Taoists are hesitant to look for “mechanisms of action”. Every “fact” is based on some assumption about the nature of reality. Assumptions, by definition, are not



absolutely provable. If the system seems to include a wide range of observations, we may say that these assumptions are at least useful, and most likely “true” to some extent. TCM assumes that life is more than merely physical; that it includes physical, mental, and spiritual components; and that these components are not entirely distinct or separable, but are connected by some energy which encompasses all three components. In TCM theory, this connecting life energy is given the name Qi. If the TCM system works in the majority of cases, and makes sense of the observations, and has been accepted as making sense for thousands of years, then is it not logical to believe the assumptions represent reality to some extent?

For us moderns, the logic of the first argument raises questions. In what way is Qi the basis of the TCM system? As I mentioned above, it might be a unifying factor, something which allows the theories to relate to each other, something which makes sense of the system. Yet some would ask (and many have asked me) “Why ‘Qi’ and not something else? Isn’t ‘Qi’ just God?”. More scientific types might say, “Everything that ‘Qi’ does can be explained by reference to (insert body system here). Why use a mystical concept like ‘Qi’ when we can speak of neurotransmitters or hormones or something well understood?” Basically, these questions boil down to this objection:

If the Qi concept can be placed in the category of faith, or can be boiled down to mere scientific process, is Qi still real? Is it still even a necessary assumption in TCM theory? Wouldn’t the theoretical framework still do its job (if it works) without the Qi concept?

This comes down to the famous dictum of “Okham’s razor”: The simplest possible explanation is usually the best. Indeed, my descriptions of some of the main TCM theories and their



relation to Qi Theory would seem to suggest that Qi is an extraneous concept. Qi as related to the Yin-Yang Theory or the Five Element Theory, is not a direct component of diagnosis. Yin and Yang, without reference to Qi, could still be useful concepts for grouping energetic phenomena and would probably still lead to effective diagnosis. Meridians, simply as a grouping of points which relate to similar systems, can be used effectively whether one believes in “Qi flow” or not. It would seem that these TCM theories could be applied in a disjointed, mechanistic way and still serve their purpose.

Yet this argument is effectively countered by the second. None of these theories and treatment methods would have emerged as they did without the unifying concept of Qi. Furthermore, they cannot reasonably be connected together without some larger theoretical framework to encompass them. Though it may seem from the outside that the diagnostic methods could be used without reference to or consideration of the Qi Theory, it is impossible to know without fully understanding the theory. The way TCM exists today must partially result from the assumptions of the Qi Theory; if it did not, the theory would not have survived. The philosophical viewpoint which posits Qi works from a wholly unique angle. Removing something from the pattern of thinking will change it. Taking away the connections between concepts and theories will render these theories still superficially useful, but impotent to change, grow, or be applied creatively. Even if Qi were removed, another similar concept would have to take its place for TCM to survive.

Again, however, the question arises: Why Qi? Why not “neurotransmitters” or “hormones” or some other scientific mechanism? A TCM practitioner could just as easily (and with validity) respond with the question: Why “neurotransmitters” or “hormones”? Why not Qi? What gives one

theoretical mechanism greater validity than the other, within their respective constructs?

Indeed, though “neurotransmitters” or “hormones” or some other scientific mechanism may make sense in the Western scientific paradigm, these are nonsensical concepts in the TCM paradigm. They would have to somehow be translated into TCM terms for them to have any use within a TCM framework; and when the terms were translated, they would most likely be categorized as some form of Qi. Can we really say that the mechanistic paradigm is better than the holistic one? If so, what would be our standard? Examining TCM practices and theories using the assumptions of mechanistic science would, naturally, make TCM seem inferior. After all, what paradigm could meet all the assumptions of mechanistic science *better than* mechanistic science? The reverse is also true; scrutinizing mechanistic science using the assumptions of TCM would make TCM appear superior for the same reason.

It is easy to find fault with the arguments of the opposing side. It is more difficult (and more courageous) to assert one’s own standards for scrutiny. What would make Qi a “real” concept for the scientist in the Western paradigm? Practicality? Scientific evidence? Faith?

Our version of practicality would be slightly different than the Taoist formation I have represented. Rather than a broad, overarching theory unifying and underlying all TCM theories, Qi would have to be a necessary component of any diagnostic or treatment procedure. In other words, the diagnosis would have to be ineffectual without the assumption of Qi.

For this necessity (or lack thereof) to be known, Qi would have to be defined in a more specific manner, either as a concept whose usefulness could be quantitatively compared to another concept, or as a phenomena which is directly measurable. In other words, it would have to be something within the realm of proof or disproof, most likely by the scientific method.

For some, faith might be adequate to believe in the reality of Qi. This, however, would reduce Qi to a more religious concept or something like prayer or God. It would exclude Qi from the realm of physical attempts to prove or even make plausible its existence. If faith is all that is necessary for the reality of Qi, this thesis may as well end here.

However, Qi is not intended as a merely spiritual concept with little or no correspondence to the physical world. Certainly this is not all that TCM practitioners intend it to mean, especially when the spiritual and physical worlds are considered to interact strongly. Qi may be a concept based partially on faith or assumption, but it is also partially understood in physical terms. Therefore, the physical aspect of Qi should be able to be studied scientifically.

In my experience, a common mistake on both sides of this debate is that each side takes the other out of context and compares it to their own system, within the context. *This type of comparison is never valid.* To make a true comparison, both sides would have to accept the same standards by which to compare, understanding these standards in the same basic way. Facilitating such an agreement of assumptions seems a daunting task. Maybe it is impossible.

...Or is it?

### ***B. Practical Qi***

The key to the problem of non-correspondence is understanding the ways in which TCM theory refers to Qi.

Those attempting to examine the reality of the Qi concept often work only from the broad definition—“life energy”. Based on this broad definition, well-intentioned TCM enthusiasts say it is obvious that there are living things, and so there must be “life energy”, and therefore, Qi. TCM skeptics say there are living things, but this does not necessarily mean that Qi exists. Prove it, they

say. And so the wheel of nonsense turns evermore.

Interestingly, very few people on either side seem willing to examine the concept of Qi more rigorously. To me, it is striking when reading TCM texts to note that the word Qi is used not only to describe “life energy” in general, but also in reference to very *specific* processes relating to the maintenance of life. For example, TCM talks about “food Qi”, the Qi we receive through nourishment. It speaks of “breath Qi”, the Qi we take in by breathing. TCM speaks of a “primordial Qi”, the original Qi one receives from one’s parents. Physical secretions are described as Qi—sweat, urine, semen or vaginal fluid, and saliva. Activities or processes which involve Qi, such as vision or certain movements, are described. Furthermore, it is said that a person dies only when their Qi leaves them—implying that Qi is something distinct which is found in the human body, but is not the sum total of the body. These specific descriptions refer, in many cases, to well understood, “discrete” scientific processes. Qi, by being equated to more specific phenomena, has suddenly become slightly less esoteric. If Qi can, in some cases, be translated into something known to Western science, the question of its “reality” suddenly becomes a moot point. It is not whether Qi is “real”, but rather, how Qi is translated in reference to the phenomenon we are examining.

It is an important question, then, when trying to ascertain the “reality” of Qi, to ask what definition of Qi we are going to accept. Shall we describe Qi in broad terms, or specifically? Will we examine it as a holistic concept, a mechanistic one, or something else entirely?

### ***C. Defining Qi in Western terms***

As I have expressed in the previous section, there is a difficulty in translation of Qi. Many choices must be made which require a greater understanding of the whole of TCM theory, observation, and practice.



This translation is made all the more difficult by a phenomenon I call “The Curse of the Well-Intentioned Defenders”. Two examples of this phenomenon come readily to mind.

Many Western defenders of TCM want to make Qi seem scientific. In an effort to provide couch Qi in scientific terms, these individuals or groups will describe Qi as “bio-electricity”, “bio-magnetism”, “electromagnetism”, or in some other pseudo-scientific way. I say “pseudo-scientific” because there is not direct scientific evidence proving that Qi is indeed reducible to these terms. “Life-force” is not easily studied, and certainly not directly. It is never studied directly enough to equate it with “bio-electricity”. At most, one could say that phenomena referred to as Qi driven also involve measurable electricity or magnetic fields—if, indeed, this was actually proven by scientific experiment. In other words, the use of these terms makes assumptions which cannot adequately be backed up by evidence.

Worse still, these terms alienate scientists. Once upon a time, a few centuries ago, there was a debate between two camps—the mechanists and the vitalists. Mechanists believed in an atomistic world, wherein discrete substances interacted with each other. Everything was explainable by these interactions, and nothing existed outside of them. Vitalists, on the other hand, believed that the world was not the sum total of its parts. Instead, they asserted that a “vital spirit” was active in things. This blurred the line between the so-called “discrete substances” and suggested that not everything which occurred could be fully explained in terms of their interactions. This debate raged on over a considerable period of time, until the vitalists made a key mistake. Based on preliminary suggestive scientific findings, vitalists started describing this “vital spirit” as electricity. The mechanists grabbed hold of the opportunity; if this “spirit” is electricity, then it can be measured and tested. Experiments seemed to suggest that it was not electricity at work in living things, but



instead, ionic interactions which seemed electrical. The mechanists won; vitalism died. Any value vitalism might have had was thrown out as well.

When a scientist hears the word “bio-electrical”, they cannot help but think of vitalism (if they know their history). As far as they are concerned, vitalism was disproved a century ago. Any attempt to equate Qi with electricity is bound to be met with great skepticism, and most likely to be dismissed as quackery. And, unfortunately, it often is.

Another unfortunate tendency is the use of Qi as a catch-all term. For example, an article by Robert Jahnke tries to illustrate the Qi concept with several examples of where Qi can be observed. He first expresses that Qi is a key component of health and balance in human beings. Jahnke then says that Qi is what allows a seedling to push up through the soil, against gravity, in order to reach the surface. Both of these assertions could make sense in TCM theory, in the broad use of the word Qi. Then Jahnke says that Qi is the force which keeps the planets in orbit around the sun.

If Jahnke wants to say that Qi is present in all these phenomena, then he is making one of two assertions:

1. Qi is life-force, and everything that exists is alive.
2. Qi is merely a general force, exerting effects on both living and non-living things.

In either case, the term Qi comes to encompass anything and everything. Qi as a force becomes indistinguishable from any other force. Either assertion makes the Qi concept so broad that it loses all meaning. If there is any hope for serious scientific study of the phenomenon known as Qi, it must be defined much more narrowly than this. If it cannot be defined more narrowly, then it cannot be scientifically studied.

### ***C. Can Qi be defined by science?***

Before any study could be undertaken to demonstrate the existence or nonexistence of Qi, the phenomena being studied must be defined. It is through definition that science can know where to look, what instruments and techniques to use, what controls are necessary. Only by understanding *what* we are looking for when we look for Qi can we design legitimate studies which could verify or falsify the Qi hypothesis.

Yes, definition is preliminary to study. Science can only study something like Qi if it is first defined. The problem is that natural science more often defines things by studying them. Indeed, science in and of itself can do no more than that. *Scientia*—in the very etymology, science presumes to examine objects of “knowledge”. Things which can be known must first be assumed to exist and to be knowable. How many scientists are willing to make that assumption about Qi? Indeed, how many should make that assumption, when they only know the concept as “life energy”, if they know it at all?

One might object that science can define Qi if it can study the phenomena where it is supposed to be the primary mode of action. With this I would agree, but this presumes a prior definition. To know which phenomena allegedly involve the action of Qi, there must first be a thorough study of TCM theory and practice. This would distinguish Qi actions from non-Qi actions. Such a study could never be completed without defining the concept of Qi. Therefore, scientific studies undertaken with this idea in mind are on the right track but are jumping ahead.

I do not think that scientific study, by itself, can define Qi by study. It must instead begin with a definition, which can then be refined by study. Well, if natural science cannot define Qi, what branch of knowledge can?

#### ***D. Philosophy has a purpose***

In the early days of scholarly pursuit, science and philosophy were inseparable disciplines. Though these two fields of study are somewhat estranged in the modern world, perhaps it is time that they returned to their roots and collaborated on something. I know just the project...

Qi is first and foremost a philosophical concept. As demonstrated previously, TCM and Qi Theory emerges from the assumptions underlying the Taoist, Buddhist, and Confucian philosophies. Since most everyone can agree on the metaphysical nature of the Qi concept (after all, it is the physical nature of Qi that is in dispute) this seems like a good place to start when trying to define Qi. (For you non-philosophers, “metaphysics” is simply understood to mean “beyond the physical”. God or the soul would be metaphysical concepts.) What branch of scholarship is more equipped to examine metaphysical concepts than philosophy?

Philosophers endeavoring to define Qi should begin with some broad questions in mind. How is Qi meant to be understood *within the TCM framework*? Is Qi a metaphysical concept? If so, what is its nature *as* a metaphysical concept? Is Qi described as a physical concept? If so, what is its nature *as* a physical concept? To what extent is Qi metaphysical, and to what extent physical? These questions would best be answered by consulting and interpreting classical works of TCM and interviewing practitioners of the various branches of TCM. The questions would need to focus on specific issues within these broad questions, since classical works and practitioners are unlikely to directly address these issues. In order to fully understand the answers, a certain direct knowledge of Chinese culture and history would be necessary.

These questions may seem irrelevant within the TCM framework. After all, as mentioned previously, TCM assumes no clear separation between the physical and the metaphysical. Thus, it

could be argued that any divisions philosophers might make would simply be arbitrary, and certainly would not get at the real nature of Qi.

This is a relevant objection. However, the problem of misunderstanding between the Western scientific and TCM paradigms is largely a problem of translation. Though making these divisions does not fully capture the intention of TCM, it is only by making these divisions that Westerners can begin to understand the intended nature of Qi. Translations are always imperfect; even different languages have different underlying assumptions, let alone different paradigms. These distinctions between physical and metaphysical are always made within science; only physical aspects of things can be scientifically examined. For a translation of TCM to have any value for scientific study, it must make these distinctions if they are possible, and to the extent that they are possible. After rough translation, the blurred line between these divisions can be analyzed within the *Western* paradigm. When the concept is better understood, there will be better terms in the Western paradigm to describe it, and a better translations will result.

Only after a preliminary translation effort has been made within a philosophical context can a working scientific definition of Qi be formed. The dialogue can then begin between the philosophical and scientific branches of this inquiry. Once there is a philosophical understanding of the Qi concept, researchers can begin to determine the answer to other, more scientific questions. Could Qi correspond to any known phenomena in Western science? If we think it could, how could our hypotheses be tested? Once Qi is better understood within the TCM framework, the classical literature could be examined for descriptions of the physiological effects the treatment is trying to stimulate. Practitioners could also be interviewed to gather similar information. Patients experiencing the treatments can note and describe the effects they feel during treatment. These



description will most likely suggest a physiological mechanism which can be tested. The better understanding of TCM and Qi theory would give some idea of *how* these mechanisms can be tested.

### **III. Can Qi be scientifically analyzed?**

As the previous two sections have illustrated, I do believe that a limited scientific analysis of Qi can be done. Before this can happen, Qi must be adequately defined and understood philosophically. Furthermore, hypotheses about the nature of Qi should be based on physiological data gathered from practitioners and patients.

In recent decades, a great deal of scientific study of TCM has been undertaken in China. This has also taken place in the West, but for fewer years and to a lesser extent. To illustrate a point, I will discuss three different types of TCM studies which seem popular. Two will relate to herbal medicine, and one to Qi emission.

#### ***A. An Eastern TCM study***

Several studies (normally from Southeast Asia) may take a format like this. The study purports to test the ability of a certain herbal combination to fight a certain disease. The paper refers not to the components of the combination, nor their amounts, but only to the TCM name of the combination. This combination, as prepared by a TCM pharmacist, is given to each participant in the study. The combination is basically the same for everyone, except that it is tailored to the diagnosis and condition of the individual. Over a period of time, certain physiological measurements are taken on the study participants. Then it is determined whether the combination helped fight the disease in question.



### ***B. A Western TCM study***

Several Western herbal studies might have the following format. The study attempts to find the mode of activity of an herb used traditionally in TCM. The herb is usually selected based on a judgment of which “diseases” it has traditional been used to treat. The main chemical components of the herb are isolated and tested, usually on a tissue in vitro or in some established test to demonstrate some type of chemical activity. If one chemical component of the herb is found to have the specified activity, this component is declared to be the mode of activity of the herb in all circumstances. If none have this activity, the herb is declared to be inactive in all circumstances.

### ***C. A Qi emission study***

Another form of study which is becoming more popular in both East and West is the “Qi emission” study. The general format of this is normally as follows. The study attempts to decide if, for example, a tumor can be reduced in size by Qi emission. The tumor is induced in live animals, usually mice. Three different groups are examined: An untreated control group, a group treated by a Qigong master, and a group treated by a “sham” master. The Qigong master, without touching the animals, emits his or her Qi into the mice. The sham master, also without touching the animals, waves his or her arms around the way the Qigong master does, but purportedly does not emit Qi. If the study reports that the group treated by Qi emission showed the greatest improvement, it is supposedly proven that Qi emission is real and can treat cancer.

### ***D. What is wrong with these pictures?***

Studies of the types described in part A are designed within the TCM framework. This type of design tries to scientifically *prove* the validity of TCM, but does so without always making the necessary controls or follow-up studies. Discussing the activity of an herbal combination, without

discussing the herbs contained in the combination, is ambiguous. Examining the combination as prepared individually for each patient gives the study more ambiguity by making it unclear what amounts of each herbs were used or the relative strengths of the herbs. Though this individuality of preparation and diagnosis is true to TCM principles, it does not adequately address scientific concerns for precision.

The type of study described in part B is not a study of TCM; it is an exercise in ethnobotany. An herb is selected from an ancient medical tradition and tested from a purely Western framework and context. Without a full understanding of TCM theory, a singular herb is chosen. It is examined with little regard for whether it is usually used in combination with other herbs. In the end, we may or may not have an active compound. The assumption is that any combination is the sum of its parts. If the herb is active alone, it has the same activity in combination, regardless of the combination. If it is inactive alone, it will never show activity in combination.

A study design of the Western type assumes the superiority of Western medicine and the “primitive” nature of TCM. The assumption is that modern science is the only way to understand things, and thus, TCM treatments are taken out of context. This type of study does not examine TCM principles, nor does it make any statement about the validity of TCM or the Qi theory. Indeed, certain Western studies have shown that herbs with no activity individually do show activity in combination! To test TCM, the treatments and methods must be performed in context and tested as such.

The third type of study described above, concerning Qi emission, is vague at best. If we cannot adequately define Qi, how can we hope to understand Qi emission? How does a scientist, not understanding Qi emission, determine that a master is, in fact, emitting Qi? Is there any way

to measure the strength of the emission? The most that can be shown is that the master is somehow influencing the cancer fighting ability of the animals. Nothing can be said about Qi emission until it is scientifically definable and measurable.

The studies are too strongly tied to the assumptions of one paradigm or the other. The first and third are firmly rooted in TCM; the second is entrenched in Western science. By designing studies which are too far within one paradigm or the other, no real progress is made in the realm of TCM knowledge. A person within the TCM paradigm has shown other people, who make the same assumptions, scientific evidence they believe. However, those who do not make those assumptions are not convinced, and those already within the paradigm do not really need convincing. The same is true of those designing TCM studies from a Western science viewpoint. Something must be done to bridge the gap if progress is to be made.

***E. I threw my hat in, and it fell on the floor***

I designed and carried out a TCM study of Qigong and its effects on healthy human subjects. It was done in an attempt to enhance my personal understanding of the constraints of TCM study.

Specifically, I was trying to understand how regular Qigong practice affected the “electrical balance” of the individual. The machine used to examine this electrical balance was a Neurometer (Figure 1). This is based on the Ryodoraku machine used for contemporary acupuncture diagnosis by those unfamiliar with traditional diagnostic methods. The Neurometer is based on the assumption that acupuncture points run along nerves. Potential values are taken from 24 total acupuncture points, six on each wrist and six on each foot. Each point measured is representative of one meridian system; a left and right value is taken for each of the 12 meridians measured. “Balance” is determined entering the values in a chart and finding a numerical average. A line is

drawn across the chart at the average value. Next, a line 0.7 cm above and below the average is also drawn across the chart. The more of these values which are found within this 1.4 cm range, the more balanced the individual is considered to be.

My study consisted of ten “healthy” human subjects of roughly the same age. Due to limited resources, healthy was defined simply as free from any serious chronic or acute diseases. These participants were asked to maintain consistent exercise, eating, and sleeping habits throughout the semester. As a subjective standard of comparison, each participant filled out a survey before the study indicating their current level of health, exercise, and any major lifestyle changes they anticipated during the course of the study (Appendix 1). A more expansive survey was given at the end of the study, asking for this information and their subjective impressions of the benefits or harms they noticed in relation to their Qigong practice.

The same Qigong form was practiced by each participant at least three times per week during the entire course of the study. It was an ancient form known as “Eight Pieces of Brocade”. To keep the practice as consistent as possible, I personally taught the form to every study participant, then provided them with a video of the form as a memory tool. Since the video also included two additional Qigong exercises, I included those in the study as well. Each practice session took a total of about 20-30 minutes.

The participants were asked to practice twice a week on their own and once a week with me. The practice with me allowed me to do measurements of each participant on a weekly basis. Every measurement was done immediately before and immediately after the Qigong practice. These included a 15 second pulse and measurements of each of the 24 meridian points.



I had hoped to do a longer study, but time and other constraints made this impossible. The longest anyone participated in the study was eight weeks; the shortest time for participation was three weeks. It is also important to note that the Neurometer only measures effects of practice on a part of the nervous system. Even if no effects of this kind were measured, there might be other effects which were not examined.

#### ***F. The Subjective Results***

My surveys made clear a flaw in the study. Though all the participants began and remained “healthy” by my initial standard, this term could have been more narrowly defined. The levels of exercise and stress were quite varied from individual to individual. The individuals stayed consistent from beginning to end, but there was very little comparison to be done between individuals.

None felt that they had received any harm from participation in this study. In a question about the length of recovery time from illness or injury, none believed their healing time had been shortened or lengthened. Several participants—almost all—believed they had received some benefit from the practice. Eighty percent perceived physical benefits, in the form of greater flexibility and breath control. Sixty percent thought they had benefitted emotionally, and fifty percent saw psychological benefits. These amounted to better handling of stressful situations and a more positive outlook on life. A few individuals indicated they had more mental clarity or more energy.

#### ***G. Wilcoxon Ranked Sign Test***

I tried to examine statistical results in two different ways. One would use a scientific statistical test making TCM assumptions, and the other would do a statistical test making Western scientific assumptions.

For the TCM statistic, I measured the level of “balance” for each individual and each complete Qigong session. The level of balance was determined using a Wilcoxon Ranked Sign Test. I counted the number of chart measurements within the 1.4 cm range before the Qigong session for an individual. I then counted the number within this range after the individual’s Qigong session. The before number was subtracted from the after number, and the sign test was performed.

Taking the data set from every individual and every Qigong session as one, I ranked and counted the signs. This would examine an immediate change in balance from before to after. The change came out as insignificant.

I then took the first before measurement and the final after measurement from every individual, in the hopes of measuring whether a directional balance had been achieved over the entire study period. This also showed an insignificant change.

I compared the sign changes in data sets from the same length of practice time for all individuals (first week, second week, and third week). The test showed no significant change.

The problem with these results is that they are ambiguous. The result of no significance could mean one of two scenarios. There may have been no significant change in any individual sign, and therefore, no change in the balance overall. It could also mean that many of the data points changed in sign from before to after, but an approximately equal number became more balanced as became less balanced. This would also give a combined result of no significance.

Either way, “balance” as understood within this TCM framework was not achieved. Whether there were changes remains a question.

## ***H. Analysis of Variance (ANOVA)***

For this section, I compared the mean of all 24 measurements before Qigong practice to the mean after Qigong practice.

Taking all the data sets together, regardless of individual or session, I performed an ANOVA. The ANOVA showed that the overall average of all the means taken before, and the overall average of all the means taken after, are approximately the same ( $p=0.696$ ).

However, I was looking for significant *change*, not direction. Thus, I separated the data sets which showed lower averages after the Qigong session from the data sets which showed higher averages after the Qigong session. There were 31 data sets which showed lower averages after; there were 30 data sets which showed higher averages after.

A comparison of all the data sets which showed lower averages after the Qigong session *did* show a significant difference in means ( $p=0.006$ ).

A comparison of all the data sets which showed higher averages after the Qigong session *also showed* a significant difference in means ( $p=0.038$ ).

None of my other comparisons showed statistical significance.

Thus, it seems apparent that the Qigong practice did cause a change in the average electrical value of these points from before to after. The changes simply did not show any specified direction.

## **IV. Concluding Remarks**

What have I learned about how to do TCM studies? In addition to my remarks about defining the term Qi in terms Western science can understand and possibly study, I think there are certain guidelines which particular studies should follow. Most notably, I think it is important to design studies both in and out of the TCM context, then compare the results. When doing herbal

studies, for example, the herbs in question should be examined first in a typical TCM combination, then each individually. The combination should be observed both in relation to an actual disease and for constituents. Then the observations from all of these studies should be compared. By examining the phenomenon from many different angles, we can actually claim to be studying TCM and the effects of Qi.

I think there is a direct correspondence between Qi phenomena and defined, scientifically observed physiological effects. In fact, I do not think Qi in a physical sense is different from these phenomena; they are two different ways of understanding and describing the same processes. Qi is not separate from the nervous system or the circulatory system or any other life promoting physical process. Instead, I hypothesize that the term Qi describes both the individual phenomena and the sum total of their effects, which make life possible.

Even when Qi is better defined and understood, the scientific analysis will most likely be guesswork. Though the physical part of Qi is probably the same as scientifically defined occurrences, the difference in how the observations are grouped and understood in either paradigm will make an exact correspondence of observations from the two paradigms impossible. Another problem is that Qi is a spiritual/mental concept as well as a physical one. The physiological descriptions one might find in classic TCM texts or from TCM practitioners might be difficult to distinguish from metaphor and visualization techniques.

In spite of these difficulties, I think there is great value in studying Traditional Chinese Medicine. Traditional Chinese Medical theory has the potential of giving Western scientists a fresh outlook on the world of phenomena which we all share. This can provide a more complete picture of the nature of reality than either paradigm could have in and of itself.



The Placebo Effect, which is just beginning to be studied as a legitimate physiological occurrence in the West, has been well known and utilized by TCM for thousands of years. It is my observation that TCM techniques are often designed with the idea of unconsciously engaging the patient in their own healing. This may be part of the reason, for example, that an acupuncturist tells the patient how many treatments will be required to cure the ailment. Many Qigong techniques involved guided visualizations to aid in self healing. Where Western science has, until recently, discounted the Placebo Effect as an undesirable side effect of human studies, TCM has designed techniques to use this powerful tool for the enhancement of medicine. Studying TCM could give scientists a better understanding of how the Placebo Effect operates and what triggers it. If Western science could learn through TCM study how to design medical treatments which better utilize and direct the Placebo Effect, Western medicine could become much better at accomplishing the goal of healing.

Traditional Chinese Medicine also makes observations of rare human potentials and abilities. Prime examples of this are the abilities Qigong masters are reported to demonstrate. These abilities are of two main types. One type is those which are rare, but seem explainable by Western science. Examples of this include the ability to make goose bumps appear on one's skin and disappear at will; the ability to take blows of tremendous force without physical injury; and the ability to show great control over one's own heart rate, blood pressure, and vital signs. It appears from these observations that Qigong masters attain a greater than normal conscious control over the autonomic nervous system. The other type are abilities which are discounted as impossible or unexplainable by Western science. Examples of this include telepathy, telekinesis, or Qi emission. The fact that these abilities are observed so widely and consistently within the TCM framework makes them

worthy of further study. Based on the first type alone, one can conclude that TCM has developed a systematic process for gaining greater individual control over normal unconscious or automatic processes. Further study of this process could give Western science a better handle on the least well understood part of the human anatomy, the central nervous system.

I am finished. Qi, what a long paper.

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## Bibliography

Anliker, Brian. Interview. September 2003.

Becker, Robert O. And Gary Selden. *The Body Electric*. William Morrow: New York. 1985.

Beinfeld, Harriet and Efrem Korngold. *Between Heaven and Earth: A Guide to Chinese Medicine*. Ballantine Books: New York. 1991.

Blumenthal, Stephen. Interview. August 2003.

Bruney, Michael. *The Qigong Year*. Storey Books: North Adams, Mass., USA. 2002.

Cerney, J.V. *Acupuncture Without Needles*. Prentice Hall: USA. 1999.

Garripoli, Garri. *Qigong: Essence of the Healing Dance*. Health Communications, Inc.: Deerfield Beach, Florida. 1999.

Hoff, Benjamin. *The Tao of Pooh*. Penguin Books: New Zealand. 1983.

Hoff, Benjamin. *The Te of Piglet*. Penguin Books: New York. 1992.

Jahnke, Roger. "Qigong (Ch'i Kung)". 1996.

[Http://www.healthy.net/library/articles/QigongandTaiji/WhatIsQigong.htm](http://www.healthy.net/library/articles/QigongandTaiji/WhatIsQigong.htm) 11/8/98.

Jahnke, Roger. "History of Qigong". 1996.

[Http://www.healthy.net/library/articles/QigongandTaiji/History.htm](http://www.healthy.net/library/articles/QigongandTaiji/History.htm) 11/8/98.

Kerr, Cathy. "Qi vs. Cancer". *Spirituality and Health*. March-April 2003.

Kidson, Ruth. *Acupuncture for Everyone*. Healing Arts Press: Rochester, Vermont. 2000.

Kipfer, Todd. Interview. June 2003.

Kostynick, Dimitri. "Beyond Ch'i: Body Energy Frequencies in Traditional Chinese Alchemy".

[Http://www.jadedragon.com/archives/tao\\_heal/bydchi1.html](http://www.jadedragon.com/archives/tao_heal/bydchi1.html) 4/25/04



- Kuhn, Thomas. *The Structure of Scientific Revolutions*. 3<sup>rd</sup> Ed. University of Chicago Press: Chicago and London. 1996.
- Lam, Ty. *Conversations*. 1995-2000.
- Lee, Robert. Interview. August 2003.
- Mann, Felix. *Acupuncture: The Ancient Chinese Art of Healing and How It Works Scientifically*. Vintage Books: New York. 1973.
- Ning, Zehing. *Conversations*. December 2003-May 2004.
- Qingshan, Liu. *Chinese Fitness: A Mind/Body Approach*. YMAA Publication Center: Jamaica Plain, Mass., USA. 1997.
- Restak, Richard. *Brainscapes*. Hyperion: New York. 1995.
- Sancier, Kenneth. "Electrodermal Measurements for Monitoring the Effects of a Qigong Workshop". *Journal of Alternative and Complementary Medicine* (2003) Vol 9, No. 2.
- Sancier, Kenneth. "Scientific Studies of Qigong".  
[Http://www.learningstrategies.com/Qigong/Study1.html](http://www.learningstrategies.com/Qigong/Study1.html) 6/9/02.
- Sawyer, Stephen W. "The Tao as a Path". [Http://history.hanover.edu/hhr/hhr4-3.html](http://history.hanover.edu/hhr/hhr4-3.html) 3/21/04
- Schirokauer, Conrad. *A Brief History of Chinese Civilization*. Thompson Learning: Toronto. 1991
- Thie, John. *Touch for Health*. DeVorss Publications: Marina del Rey, CA. 1998.
- Traditional Chinese Fitness Exercises*. New World Press: Beijing, China. 1984.
- Tsu, Lao. *Tao Te Ching*. Translated by Gia-Fu Feng and Jane English. Vintage Books: New York. 1972.
- Wildish, Paul. *Principles of Taoism*. Thorsons: London. 2000.